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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/759,509 | 01/15/2004 | Hans W. Bruesselbach | B-4851NP 621650-2 | 7060 |

36716 7590 12/19/2006

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| EXAMINER |
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SINGH, DALZID E

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| ART UNIT | PAPER NUMBER |
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2613

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 12/19/2006 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/759,509

Applicant(s)

BRUESSELBACH ET AL.

Examiner

Dalzd Singh

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 10-14, 16, 17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8, 9, 15 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6, 7, 10, 12-14, 16, 17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipate by Wissinger (US Patent No. 5,475,520).

Regarding claim 1, an optical communication system, shown in Fig. 1, comprising:

a transmitting station (11) transmitting one or more optical beams through free space;

a receiving station (30) receiving at least one of the one or more optical beams and quantifying a parameter for each of the one or more optical beams; and

a wireless feedback link sending information associated with the quantified parameter for each one of the one or more optical beams to the transmitting station, and in response thereto, the transmitting station using the information to adjust at least one of the one or more optical beams (the wireless feedback link is provided by transmitter (40)).

Regarding claim 2, wherein the wireless feedback link further comprises a feedback receiver (42) located at the transmitting station and a feedback transmitter (40) located at the receiving station, the feedback transmitter transmitting the information to the feedback receiver.

Regarding claim 3, wherein the one or more optical beams comprise one or more uniquely tagged optical beams (see col. 3, lines 31-45; col. 4, lines 44-54).

Regarding claims 6 and 16, wherein the parameter is the power of at least one of the one or more uniquely tagged optical beams (it is inherent to detect power of the optical beam).

Regarding claims 7 and 17, wherein the wireless feedback link is a RF link or a low-bandwidth optical link (see Fig. 1).

Regarding claim 10, Wissinger teaches method for transmitting optical signal comprising:

applying a tag to one or more optical beams in a transmitting station (see col. 3, lines 31-45; col. 4, lines 48-54);

transmitting the one or more uniquely tagged optical beams through free space from the transmitting station (shown in Fig. 1, transmitter (11) transmits the optical beam);

receiving the one or more uniquely tagged optical beams at a receiving station (receiver (30) receives the optical beam);

quantifying a parameter associated with each one of the one or more uniquely tagged optical beams (the optical beam is received and processed; see col. 3, lines 46-61; see col. 4, lines 40-67 to col. 5, lines 1-15);

sending information associated with the quantified parameter for each one of the one or more uniquely tagged optical beams to the transmitting station over a wireless feedback link (transmitter (40) send information to transmitting station (11)); and

adjusting at least one of the one or more uniquely tagged optical beams based on the information (beam control and pointing mechanism adjust the optical beam based on the information).

Regarding claims 12 and 20, wherein applying a tag comprises modulating at least one of the one or more optical beams with a specified carrier frequency (see col. 4, lines 40-67 to col. 5, lines 1-15; it is well known to provide amplitude modulation to the signal).

Regarding claim 13, Wissinger discloses an adaptive optical system comprising:

an optical fiber array located at a transmitting station, the optical fiber array emitting one or more uniquely tagged optical beams into free space from an aperture (see col. 3, lines 17-30);

a receiving station (30) receiving the one or more uniquely tagged optical beams and quantifying a parameter for each uniquely tagged optical beam of the one or more uniquely tagged optical beams (the optical beam is received and processed; see col. 3, lines 46-61; see col. 4, lines 40-67 to col. 5, lines 1-15); and

a wireless feedback link sending information associated with the quantified parameter for each uniquely tagged optical beam to the transmitting station, and in response thereto, the transmitting station using the information to adjust at least one uniquely tagged optical beam to compensate for phase fluctuations (the optical beam is received and processed; see col. 3, lines 46-61; see col. 4, lines 40-67 to col. 5, lines 1-15).

Regarding claim 14, wherein the wireless feedback link further comprises a feedback receiver located at the transmitting station and a feedback transmitter located at the receiving station, the feedback transmitter transmitting the information to the feedback receiver (see Fig. 1).

Regarding claim 19, Wissinger discloses an optical communication system comprising:

means for applying a tag to one or more optical beams in a transmitting station (see col. 4, lines 40-54);

means for transmitting (11) the one or more uniquely tagged optical beams through free space from the transmitting station (see Fig. 1);

means for receiving (30) the one or more uniquely tagged optical beams at a receiving station;

means for quantifying a parameter associated with each one of the one or more uniquely tagged optical beams (the optical beam is received and processed; see col. 3, lines 46-61; see col. 4, lines 40-67 to col. 5, lines 1-15);

means for sending information associated with the quantified parameter for each one of the one or more uniquely tagged optical beams to the transmitting station over a wireless feedback link; and means for adjusting at least one of the one or more uniquely tagged optical beams based on the information (see Fig. 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wissinger (US Patent No. 5,475,520) in view of Graves et al (US Pub. No. 2004/0156638).

Regarding claim 11, Wissinger teaches method of adjusting at least one or more uniquely tagged optical beams and differ from the claimed invention in that Wissinger does not disclose adjusting the phase of the at least one uniquely tagged optical beam. Graves et al teach atmospheric optical data transmission and method of adjusting phase of the optical signal (see paragraph [0031]). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide method of adjusting phase of the optical signal as taught by Graves et al. One of ordinary skill in the art would have been motivated to do such in order to control

interference affect.

Allowable Subject Matter

5. Claims 4, 5, 8, 9, 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pepper et al (US Pub. No. 2002/0153497) is cited to show robust infrared countermeasure system and method.

Presby et al (US Pub. No. 2003/0001073) is cited to show method and apparatus for the correction of optical signal wavefront distortion within a free-space optical communication.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS
December 14, 2006

David Singh